Search and Rescue Satellite-Aided Tracking (SARSAT)

U.S. Mission Control Center Operations, Maintenance & Technical Support Contract

Request for Delegation of Procurement Authority

Commerce Information Technology Review Board

Ajay Mehta, Program Manager

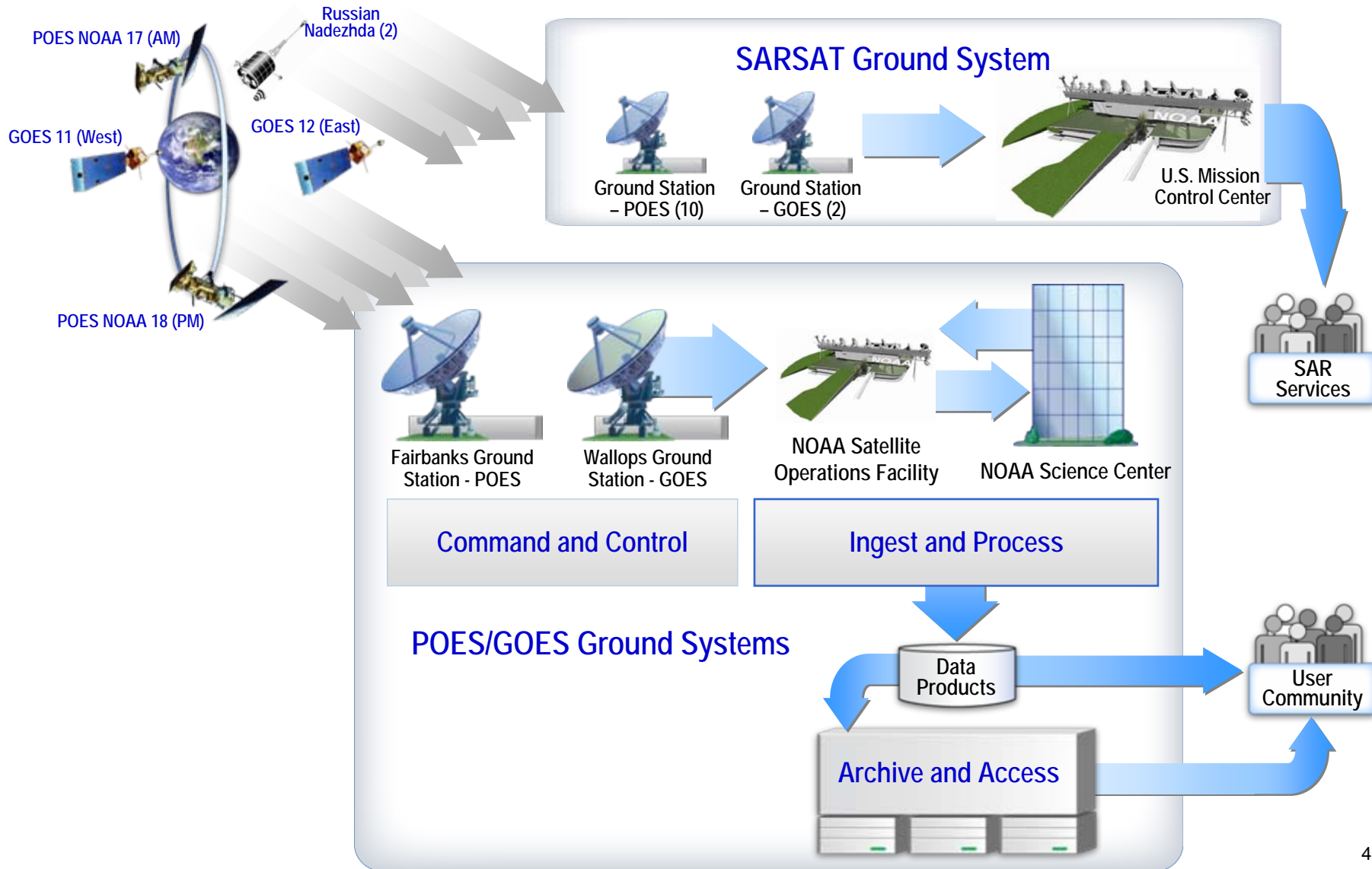**February 28, 2007**

Agenda

- Introduction
- Basis for Investment
- Project Management
- Risk Management
- IT Security
- Architectural Compliance
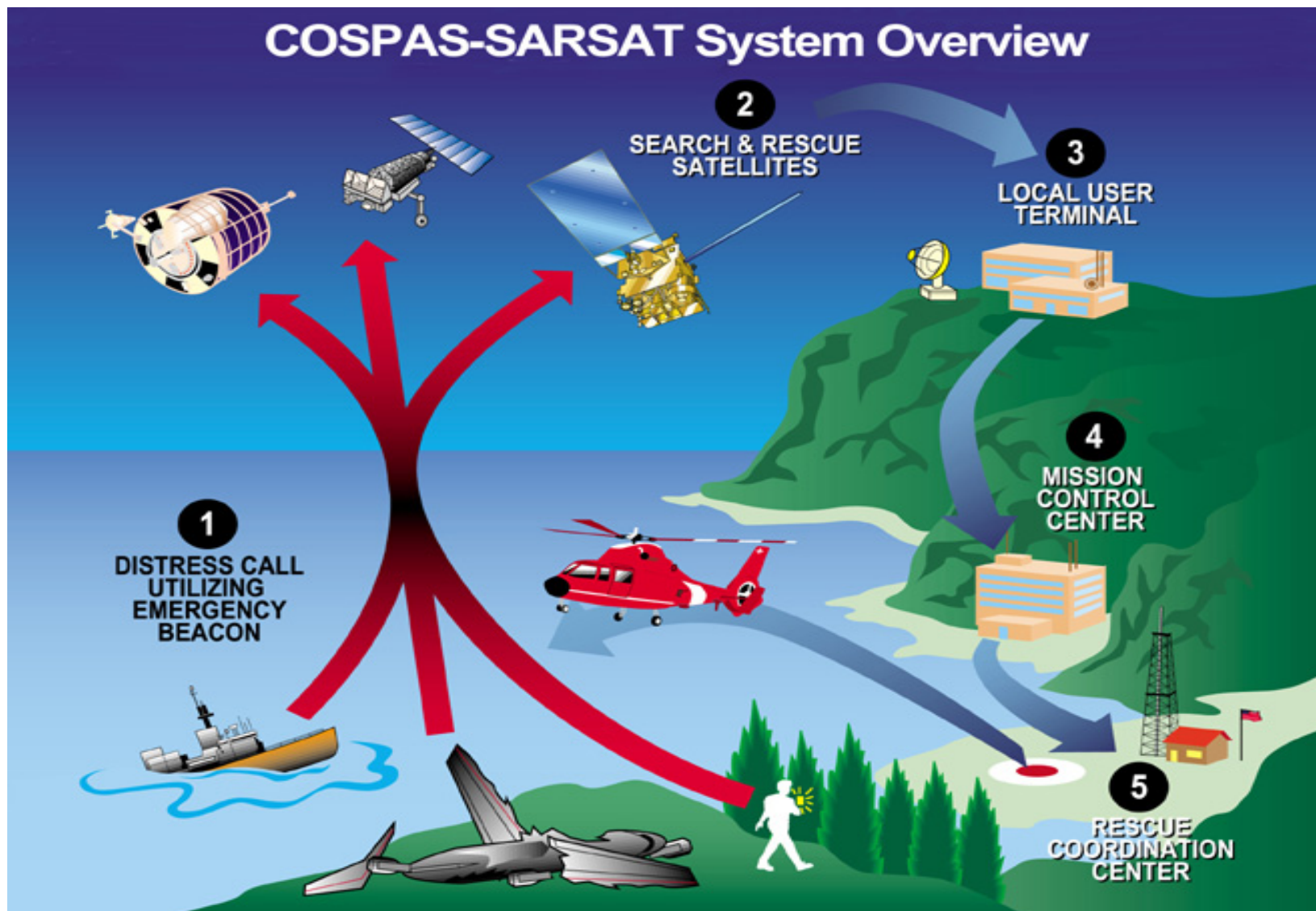- Administrative/Departmental Goals and Initiatives

Introduction

- Requesting Delegation of Procurement Authority (DPA) of $18M for operations, maintenance and technical support of the U. S. Mission Control Center (USMCC) and the SARSAT system in the United States
  - This contract is a re-compete of an existing contract
  - The maximum period of performance is 7.5 years
    - One base year, four option years and maximum of five 6-month periods awarded based on contractor performance
- The SARSAT system is a satellite based system that relays electronic distress signals from aviators, mariners and land-based users - part of international Cospas-Sarsat system
- No other public or private sector system provides this service
  - One private organization that provided distress alerting has discontinued the service as it was not economically viable
  - Service historically free under international conventions and national policy

Introduction

SARSAT Ground System

- POES NOAA 17 (AM)
- Russian Nadezhda (2)
- GOES 11 (West)
- GOES 12 (East)
- POES NOAA 18 (PM)

Ground Station – POES (10)

Ground Station – GOES (2)

U.S. Mission Control Center

SAR Services

Fairbanks Ground Station - POES

Wallops Ground Station - GOES

NOAA Satellite Operations Facility

NOAA Science Center

Command and Control

Ingest and Process

POES/GOES Ground Systems

Data Products

Archive and Access

User Community

Introduction

Introduction

- Fishing Vessel "BIGGIN" – November 16, 2006 (Florida)

- Two persons rescued after their vessel sank

- Emergency beacon detected by NOAA satellite and distress signal processed and transmitted by SARSAT ground station and USMCC

- Quote from NBC affiliate "…and they are thankful for the EPIRB[*] device that saved their lives. "That's what saved his life!" exclaimed Grove's wife, Becky."

* EPIRB – Emergency Position-Indicating Radio Beacon

- Crashed Helicopter – July 10, 2006 (Washington)

- Two passengers on board

- Emergency beacon detected by NOAA satellite and distress signal processed and transmitted by SARSAT ground station and USMCC

- Two hours and 40 minutes from distress alert to rescue forces on scene

- Two persons safely recovered

Introduction

- **SARSAT (NOAA5023)**
  - High impact (FIPS199 / NIST 800-60)
  - National Critical (Commerce's Homeland Security Perspective)
  - System comprises radio frequency equipment, hardware, software and communications for the following components:
    - U.S. Mission Control Center (USMCC) (Located in NOAA's Satellite Operations Facility in Maryland)
      - Web based services (e.g., Registration Database)
    - Local User Terminals (Satellite Ground Stations) for polar-orbiting and geostationary orbiting satellites (Located in Guam, Hawaii, Alaska, California, Florida and Maryland)

- **USMCC comprises:**
  - PC-based System operating on Windows 2003
  - Hardware includes PCs, servers, routers and switches
  - Software includes Visual Basic, C++, Visual C++, Java, MS SQL, and Commercial Off-The-Shelf (COTS) software such as MapInfo

Introduction

- Scope of Contract - Acquire services for the USMCC and the SARSAT system
  - 24x7 operation of the USMCC
    - Ground segment monitoring
    - Point of contact for search and rescue services
  - Administer Beacon Registration Database and Incident History Database
    - Manual entry of registration forms
    - Assist emergency beacon owners and rescue personnel with databases
  - Software Maintenance Support
  - Technical Support for the SARSAT system
    - Hardware and network maintenance
    - Operational and technical analysis
  - Assist with IT Security Management
  - Additional support for web-based data collection system applications that share a USMCC web server
- Currently operating under an extension to March 2007
- Requesting extension through September 2007

Basis for Investment

- SARSAT rescues more than 250 persons annually in the United States (more than 1,400 world-wide) and provides a net benefit of more than $250M[1] annually to the Federal Government
  - $250M based on 2005 Cost Benefit Analysis
  - USMCC operations key to life-saving mission
- Drivers
  - International Cospas-Sarsat Programme Agreement
  - Interagency Cospas-Sarsat Memorandum of Agreement
  - National Search and Rescue Plan

(1) "Economic Statistics for NOAA," April 2006, http://www.economics.noaa.gov/

Basis for Investment

- Procurement Alternatives Considered
  - Consolidation with NOAA5001 Environmental Satellite Processing Center (ESPC)
    - No operational or financial benefit
    - Few commonalities exist between ESPC and SARSAT in terms of mission, systems and customers
    - Tasks and skill sets sufficiently different
  - Full and Open Competition among Small Business
    - Time constraints
    - Requires additional extension of current contract
  - Use of Existing Government Wide Acquisition Contract (GWAC)
    - Selected alternative
    - Review of Commerce IT Solutions (COMMITS) NexGen contract reveals several qualified vendors
    - Competitively awarded in a timely manner
    - Opportunity for pre-approved IT small businesses

Basis for Investment

- Acquisition Strategy
  - Will use small business set-aside approach
    - Work historically performed by small businesses
  - Will use a hybrid type contract (firm fixed price and cost plus)
  - Will use performance based statement of work
  - Will use COMMITS
    - Employ a down-select process to limit number of vendors
    - Receive full proposals from sub-set of vendors
    - Review proposals for technical content and receive any oral clarifications
    - Award contract on "best value" in terms of technical/cost

Basis for Investment

(FY$K):	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
CAPABILITY:									
Current Program (NOAA ORF)	1,135	1,164	1,318	1,394	1,380	1,412	1,321	1,351	1,382
Current IT Resources (NOAA ORF)	1,150	1,180	1,336	1,366	1,399	1,431	1,339	1,369	1,401
Program Total (NOAA ORF)	**2,285**	**2,344**	**2,654**	**2,715**	**2,779**	**2,843**	**2,660**	**2,720**	**2,783**
Reimbursable (USAF, USCG)	2,500	3,600	3,600	3,600	3,600	3,600	3,200	3,200	3,200
IT COMPONENTS:									
Hardware	0	486	357	348	158	166	325	150	150
COTS Software	75	34	0	0	20	21	25	50	50
Support Services	1,686	1,939	2,461	2,234	2,426	2,434	2,177	2,250	2,250
Telecommunications	200	70	70	70	70	70	70	100	100
IT Security	187	232	244	246	249	251	244	250	250
IT Training	10	15	15	15	15	20	20	25	25
FTE Costs	250	250	258	265	273	281	290	299	309
IT Component Total (NOAA ORF/PAC & Reimbursable)	**2,408**	**2,992**	**3,147**	**3,178**	**3,211**	**3,243**	**3,151**	**3,124**	**3,134**
Non-IT Component Total (NOAA ORF/PAC & Reimbursable	**2,377**	**2,952**	**3,107**	**3,137**	**3,168**	**3,200**	**2,709**	**2,796**	**2,849**
USMCC Contract (Program)	120	480	480	480	480	480	480	480	160
USMCC Contract (IT)	280	1,920	1,920	1,920	1,920	1,920	1,920	1,920	640
Total USMCC Contract (new)	**400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**800**

Basis for Investment

Date	Milestone
12/15/06	Complete Exhibit 300 and Acquisition Plan (Attachment A to Exhibit 300)
01/03/07	Obtain NOAA clearance on Acquisition Plan
01/09/07	Brief NITRB
02/10/07	Finalize Performance Based Statement of Work
02/28/07	Brief CITRB/ARB
03/07/07	Obtain Delegation of Procurement Authority
03/07/07	Obtain Solicitation reviews and clearances (e.g., legal, etc.)
03/15/07	Issue Request for Solutions, Governments Questions to Contractors
04/02/07	Conduct Pre-proposal Conference and Site Visit
04/16/07	Receive Down-select Responses
04/30/07	Complete Down-select review and notify selected bidders
05/15/07	Receive Offers from selected bidders
06/01/07	Complete Technical Evaluation
06/15/07	Determine Competitive Range
06/15/07	Open negotiations
06/29/07	Receive Final Proposals
07/13/07	Source Selection
07/16/07	Review Task/Delivery Order and obtain clearance (e.g., legal, etc.)
07/30/07	Award Task/Delivery Order, and Announcement on COMMITS Business Opportunities Page, if applicable.

Project Management

Ajay Mehta
Project Manager

PM Level 3
COR Level 3

Edith Jones
Contracting Officer

Warrant Level 3

William Burkhart
COR

COR Level 3

Tom Button
ACOR

COR Level 3

Brian Little
ISSO

COR Level 2
CISSP

USMCC
Contractor
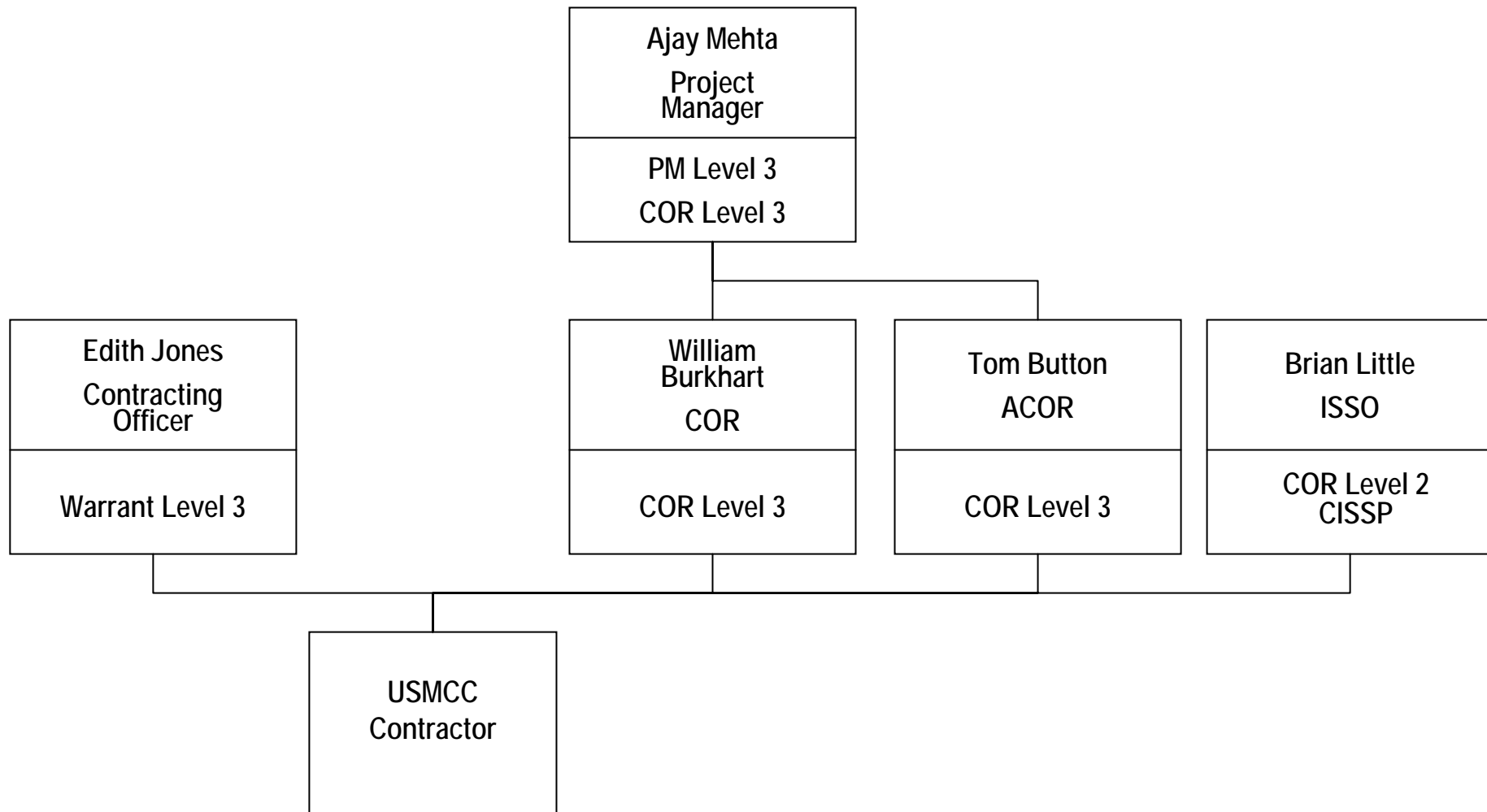
Project Management

- Earned Value Management (EVM)
  - EVM is not appropriate because it is a level of effort support services contract - Operational Analysis will continue to be submitted according to DOC/NOAA guidance
- Changes to system managed by Configuration Control Board (CCB)
  - Contracting Officer's Representative chairs CCB
  - Changes to hardware and software driven by System Problem Reports and System Change Proposals
  - CCB determines priority and schedule of system changes
- Contracting Officer's Representative (COR) responsible for contractor cost, schedule and performance

Project Management

- Contract Management:
  - Performance metrics developed in the areas of operations support, software maintenance and technical support
  - Reporting
    - Vendor provides daily brief on system operations
    - Vendor provides bi-weekly status on technical and operations support
    - Vendor provides status of system changes to CCB
    - Vendor provides monthly reporting on cost and general schedule and performance issues
  - Annual review for performance award
    - Tied to cost, schedule, performance, and support of the mission

Project Management

- Lessons Learned:
  - Select vendors whose goals align with government's mission
    - Vendor for SARSAT satellite ground stations selected based on commitment to customer service and performance
    - Directly resulted in improvements in accuracy of distress alerts and availability of ground segment
    - Past performance and operational experience will be highly weighted in this procurement
  - Good documentation key in interagency / international programs
    - Has helped to ensure smooth transition as military leadership and staff from national partners has rotated
    - Helps mitigate risk due to loss of contractor personnel
    - Will require new vendor to continue high-level of documentation
  - Clear linkages between policy, requirements, and program execution
    - All activities can be traced to agreements and policy and processes exist to validate requirements

Risk Management

- Risk management activities captured in two documents:
  - Interagency SARSAT Risk Management Plan – July 1, 2006
    - Focus on program and operational risks
    - Reviewed on annual basis
  - SARSAT Risk Assessment – June 16, 2005
    - Focus on IT and IT security risks
    - Required as part of Certification and Accreditation process
    - Will be updated by September 14, 2007

Risk Management

Procurement Risks						
Rank	Risk	Impact	Severity	Probability	Mitigation	Type (Mission, Schedule, Cost)
1	Loss of Expertise	Anomaly – Resolution time may be adversely impacted. IT Security C&A may be impacted	High	Medium	- Provide for two month overlap transition for new and old contract - Identify key positions - Delay expiration of old contract until after C&A is completed - System and procedures/policies well documented at national and international levels	Mission
2	Proposed Cost Exceeds Budget	Improvements and updates will be delayed	High	Low	- Identify critical activities and functions - Prioritize non-critical activities - Complete Independent Government Estimate and have it validated by other agencies	Cost
3	Cost Overruns	Improvements and other non-critical activities will be deferred	Medium	Low	- Perform critical operations under fixed price - Use performance measures to monitor level of effort - Develop annual work plan	Mission
4	Further Extension of Current Contract	Time and resources are needed to justify the impact	Low	Low	- Use COMMITS NexGen GWAC	Schedule, Cost

IT Security

- System Certification & Accreditation received in June 2005
- Recertification scheduled for completion by September 14, 2007
- Configuration management in place to assess and mitigate IT security risks
  - ISSO on CCB
- Well-defined network boundary
- Centralized firewall management
- Employ and audit Intrusion Detection System

IT Security

- SARSAT Security Plan completed June 16, 2005 – in process of being updated for recertification
  - Compliant with DOC/NOAA guidance
- Employing operational and technical controls as outlined in FIPS200 and NIST 800-53
  - Plan of Action & Milestones being developed for those controls not currently implemented – will be completed by next Certification and Accreditation
- On track to complete most Plan of Action & Milestones according to published schedules
  - Includes those identified in the Inspector General's report on SARSAT E-authentication
  - Only milestones at risk are related to security background checks which are behind schedule due to backlog at Office of Personnel Management
- SARSAT expending approximately 8% of IT budget on IT security activities
  - This level will be reviewed after next Certification and Accreditation to determine adequacy

IT Security

- Continuity of Operation Plan (COOP) in place for SARSAT
  - Tested in October/November 2006
  - Needs to be updated as a result of the move to the new NOAA Satellite Operations Facility
- Contingency plan in place – Tested in November, 2006
- Backup U.S. Mission Control Center system being relocated to Critical Infrastructure Protection site at Wallops Island, VA.
- This procurement will help ensure that system security requirements are met
  - Activities include planning for and implementing controls, testing, monitoring, risk assessments, contingency operations, and documentation
- IT Security Issues:
  - Interconnection Agreement with International Partners
    - Compensating measures include firewalls and restrictive access policy
  - Completing next Certification and Accreditation before current contract ends

Architectural Compliance

- Collaboration on Achieving Enterprise Solutions
  - Reviewed possible convergence with Environmental Satellite Processing Center
  - Will use *NOAAnet* for data communications at selected sites (e.g., Alaska)
  - Will use Wallops Island Command and Data Acquisition Site to host backup USMCC
  - Use of U.S. Coast Guard networks to reduce cost and number of ports
- Reuse of existing assets
  - Web-based registration database software reused by international Cospas-Sarsat organization to provide global registration capability
- Usage of standards
  - Complies with Federal Enterprise Architecture standards
  - Government Paperwork Elimination Act (GPEA)

Administrative / Departmental Goals and Initiatives

- Maps to Federal Enterprise Architecture Business Reference Model:
  - Disaster Management (supports Search and Rescue)
  - Homeland Security (supports Maritime Transportation Security)
- SARSAT part of NOAA's Emergency Response Program in the Commerce and Transportation Goal
- Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation
  - Reduce human risk, environmental, and economic consequences resulting from natural or human-induced emergencies

SARSAT USMCC Operations, Maintenance & Technical Support
Emergency Response Program (SARSAT)

DPA REVIEW

- **NOAA GOAL: Commerce & Transportation**
- **NOAA PROGRAM: Emergency Response**
- **EXHIBIT 300: NOAA/NESDIS Search and Rescue Satellite-Aided Tracking (SARSAT)**
- **TITLE OF ACQUISITION: SARSAT USMCC Operations, Maintenance & Technical Support**
- **TYPE OF ACQUISITION (Competitive, Sole Source):**
    - **Competitive – COMMITS NexGen**
- **PROJECT MANAGER: Ajay Mehta**
- **CONTRACTING OFFICER: Edith Jones**
- **COR: Bill Burkhart**

FUNDING

(FY$K):	FY 07	FY 08	FY 09	FY10	FY11	FY12	FY13
ORF	280	800	800	800	800	800	600
Reimbursable	120	1,600	1,600	1,600	1,600	1,600	1,600
Total	400	2,400	2,400	2,400	2,400	2,400	2,400

COMPONENTS:	FY 07	FY 08	FY 09	FY10	FY11	FY12	FY13
Hardware	0	0	0	0	0	0	0
COTS Software	0	0	0	0	0	0	0
Support Services (ex: software maint., dev.,	348	2,156	2,156	2,156	2,156	2,156	2,156
Telecommunications	0	0	0	0	0	0	0
IT Security (Ex: McAfee Software, Security Plan dev., Incident Response)	47	232	232	232	232	232	232
IT Training	5	12	12	12	12	12	12
Common Services (ex. Help Desk)	0	0	0	0	0	0	0

CONTRACTING LANGUAGE

IT SECURITY
- FAR clause security processing requirement for contractor personnel

EVMS
- Operational Analysis

PERFORMANCE BASED CONTRACTING
- This is a performance based contract with performance tied to operations, software maintenance and technical support

IT SECURITY, MILESTONES & RISKS

IT SECURITY
- SARSAT C&A, NOAA5023, June 17, 2005

MILESTONES
- 01/09/07 – Brief NITRB
- 02/28/07 – Brief CITRB
- 03/15/07 – Release Performance Based Statement of Work
- 06/01/07 – Complete Technical Evaluation
- 07/13/07 – Source Selection
- 07/30/07 – Award Task/Delivery Order

RISKS
- Loss of Expertise

Backup Slides

Acronyms

ACOR	Alternative COR		GOES	Geostationary Operational Environmental Satellite
CISSP	Certified Information System Security Professional		GPEA	Government Paperwork Elimination Act
COMMITS	Commerce IT Solutions		GWAC	Government-Wide Acquisition Contract
COOP	Continuity of Operations Plan		ISSO	Information System Security Officer
CCB	Configuration Control Board		LUT	Local User Terminal (Satellite Ground Station)
COR	Contracting Officer's Representative		NIST	National Institute for Standards and Technology
COTS	Commercial Off-The-Shelf		ORF	Operations, Research, Facilities
DPA	Delegation of Procurement Authority		PAC	Procurement, Acquisition Construction
ESPC	Environmental Satellite Processing Center		PM	Project Management
FTE	Full Time Equivalent		POES	Polar-orbiting Operational Environmental Satellite
EVMS	Earned Value Management System		RCC	Rescue Coordination Center
FIPS	Federal Information Processing Standards		SARSAT	Search and Rescue Satellite Aided Tracking
			USMCC	U.S. Mission Control Center

Basis for Investment

Metric	Unit	Fiscal Year						
		2007	2008	2009	2010	2011	2012	2013
Use of Web-Based Registration	Percent	40	43	46	49	52	55	60
Registration Currency	Percent	75.5	76	76.5	77	77.5	78	78.5
Percent of Beacons Registered	Percent	77	78	79	80	81	82	83
Usefulness of Registration Database	Percent	66	68	70	72	74	76	78
Accuracy of Registration Database	Percent	78	80	82	84	86	88	90
Number of RCCs Trained Annually	Number	2	2	2	2	2	2	2
Timing	% < 60 mns	91	91	92	93	94	95	95
Accuracy	% < 5km	91	91	92	93	94	95	95
Availability	Percent	98	98	98	98	98	98	98
Throughput of Beacon Messages	Percent	93	93	93	93	93	93	93
RCC Satisfaction Index	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Public Satisfaction Index	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
False Alert Rate	Percent	2.75	2.5	2.5	2.25	2	2	1.75
Persons Informed about False Alerts	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Search and Rescue Effectiveness	Total Cost/Rescue	TBD	TBD	TBD	TBD	TBD	TBD	TBD

USMCC contractor has lead

USMCC contractor supports

Project Management

- SARSAT Program Manager – Ajay Mehta
  - 11 years of experience providing management and technical support for IT systems with a value of $12M
  - 40 hours plus of Project Management Training
  - PM Level = 3
  - COR Level = 3
- Contracting Officer – Edith Jones
  - Warrant Level = 3
  - CO for Multiple contracts valued at more than $10M
- Contracting Officer's Representative – William Burkhart
  - SARSAT Operations Lead
  - More than 20 years experience managing and providing oversight for large scale IT systems
  - Current COR for USMCC Operations and Maintenance Contract
  - COR Level = 3
  - 40 hours plus of Project Management Training
  - Chair of Configuration Control Board for six years